EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: April 10, 2001
2001-08-51

Send to all owners and operators of CFM International (CFMI) CFM56-5C turbofan engines that are installed on, but not limited to Airbus Industrie A340 airplanes and all International Civil Aviation Authorities with whom we have Bilateral Agreements.

This emergency Airworthiness Directive (AD) is prompted by a recent report of a significant engine fuel leak under the thrust reverser cowls at the fuel manifold level. The leak was confirmed to be coming from a hole in the fuel manifold pigtail. The hole was a result of interference and chafing between the CJ9L harness high pressure turbine clearance control (HPTCC) sensor lead and fuel manifold. This is the second fuel leak event at this location. Additional engine inspections by the operator who experienced the engine fuel leak discovered two other engines exhibiting interference of the CJ9L harness with fuel manifold and chafing of the fuel manifold. The investigation has identified three causes for lack of clearance between the HPTCC harness and the fuel manifold:

(1) Incorrect routing the CJ9L harness
(2) Incorrect orientation of the CJ9L harness cushion clamps, and
(3) Wear of the silicone material in the clamp which allows the harness to move within the clamp. This clamp material is used on older configuration clamps. The later configuration uses a metallic material.

This condition, if not corrected, could result in fuel leakage in the hot section or primary fire zone of the engine resulting in an engine fire and subsequent damage to the airplane.

The FAA has reviewed and approved the technical contents of CFMI All Operators Wire (AOW) No. 01/CFM56/425, dated April 10, 2001. That AOW specifies procedures to:

- Inspect the fuel manifold for chafing.
- Inspect the CJ9L harness for serviceability.
- Inspect the routing of the CJ9L harness for correct installation of the bracket and clamps, and for clamp wear.
- Verify a minimum clearance of 12mm (0.5 inch) between the harness and the fuel manifold at all locations.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD requires within 10 days after receipt of this AD, an initial inspection of the fuel manifold for wear or chaffing and the CJ9L harness for correct installation, for clamp wear and to verify a minimum clearance between the CJ9L harness and the fuel manifold. Repetitive inspections of the fuel manifold, clamps, CJ9L harness will be required within every 500 hours time in service until the new

configuration clamps are installed on the harness. The actions are required to be accomplished in accordance with the All Operators Wire described previously.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2001-08-51 CFM International (CFMI): Docket No. 2001-NE-08-AD

Applicability

This emergency AD is applicable to CFM56-5C turbofan engines. These engines are installed on, but not limited to Airbus Industrie A340 airplanes.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance is required as indicated.

To prevent fuel leakage in the hot section or primary fire zone of the engine which may result in an engine fire and subsequent damage to the airplane, do the following:

Inspection Requirements

(a) Within 10 days after receipt of this emergency AD, do the following:

(1) Inspect fuel manifold for serviceability, and disposition in accordance with paragraphs 1 through 1.c. of CFMI CFM56 All Operator's Wire Message (AOW) No. 01/CFM56/425, titled, "CFM56-5C Fuel Manifold Leak", dated April 10, 2001.

(2) Visually inspect harness CJ9L for wear and replace harness within the next 3,000 hours time-in-service if wire braid is worn through (pierced).

(3) Visually inspect and, if necessary, correct the bracket and clamp locations at details R and S of the CJ9L harness as shown in Appendix 1 of this AD, titled “Figure 401 of Airbus Maintenance Manual AMM ATA 73-21-50” in accordance with paragraphs 3 through 3.c. of AOW No. 01/CFM56/425, dated April 10, 2001.

(4) Visually inspect the silicone material clamps for wear and harness looseness at details Q, R, and S as shown in Appendix 1 of this AD, and before further flight, replace clamps if worn or if harness is loose.

(5) After performing the inspection requirements of paragraphs (a)(2), (a)(3), and (a)(4) of this AD, verify that a minimum clearance of 12mm (0.5 inch) exists between the CJ9L harness and the fuel manifold at all locations

Repetitive Inspections.

(b) Thereafter, repeat the actions required by paragraph (a) of this AD at intervals not to exceed 500 hours time since last inspection.

Terminating Actions

(c) Replacement of existing clamps (red and brown silicon) at details Q, R, and S of CJ9L harness with new clamps part numbers 649-412-351-0 and 649-412-354-0 constitutes terminating action for the repetitive inspection requirements of paragraph (b) of this AD.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators shall submit their requests through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

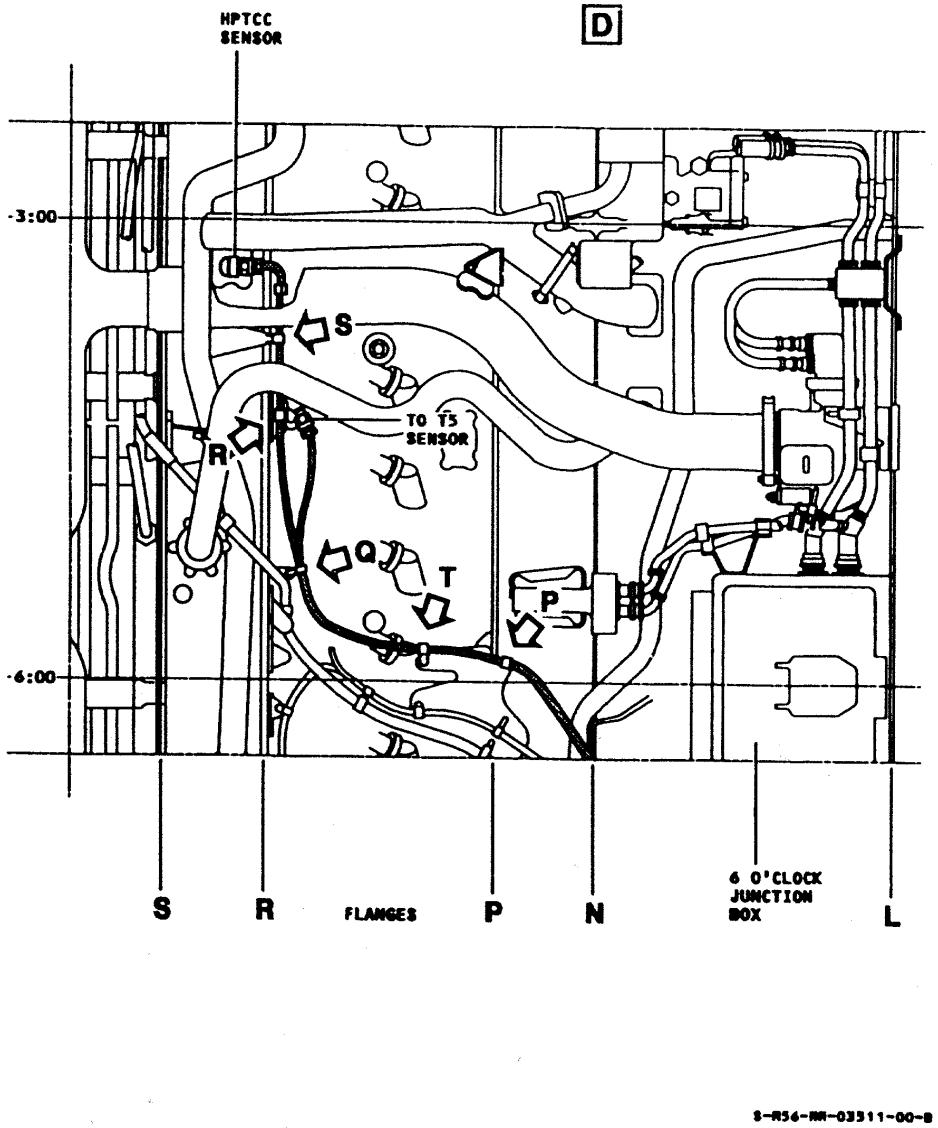
(f) Copies of the applicable service information may be obtained from CFM International, Technical Publications Department, 1 Neumann Way, Cincinnati, OH 45215; telephone (513) 552-2981, fax (513) 552-2816. This information may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

Effective Date

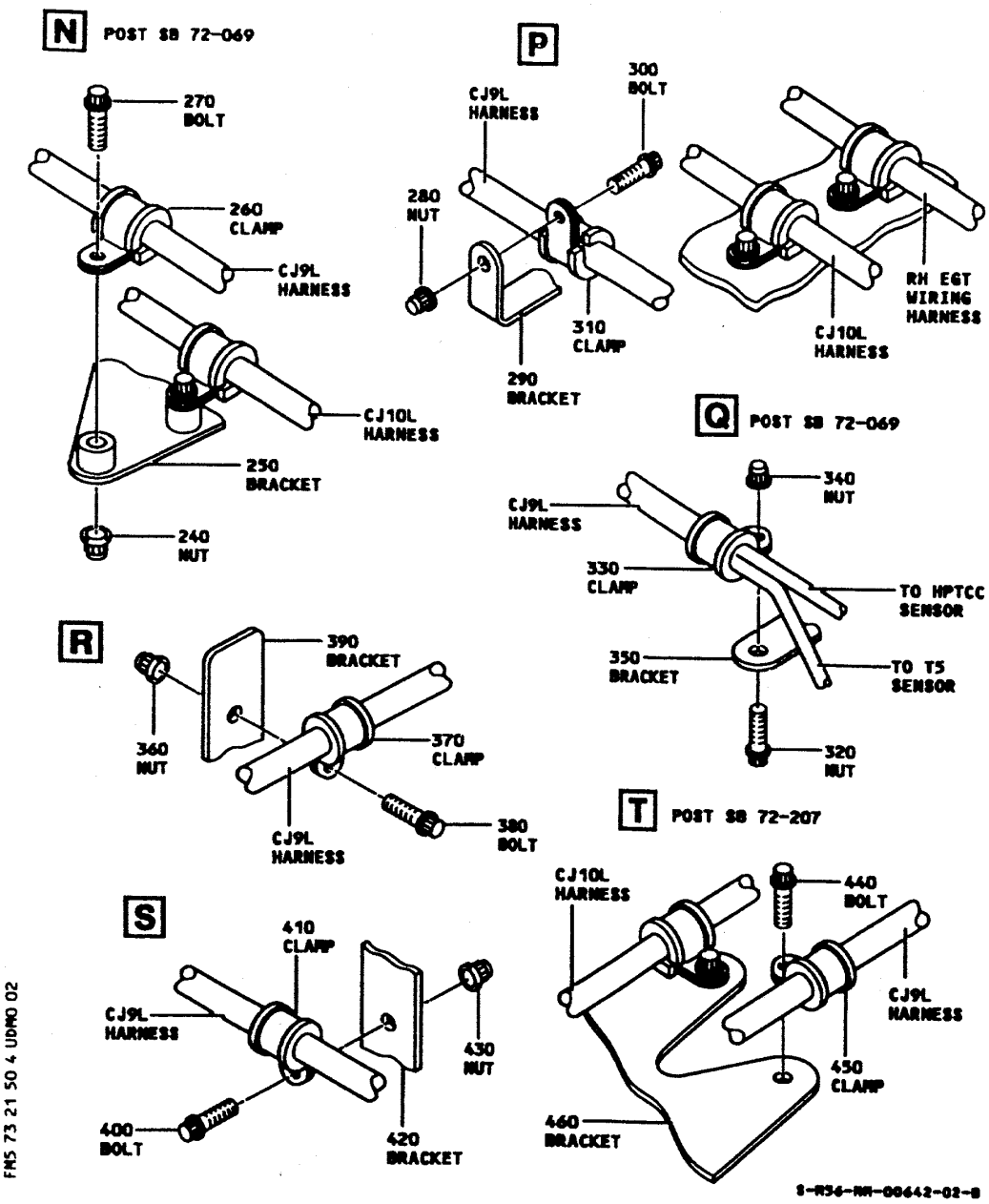
(g) Emergency AD 2001-08-51, issued April 10, 2001, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: James Rosa, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; telephone (781) 238-7152; fax (781) 238-7199.

Issued in Burlington, Massachusetts on April 10, 2001.
David A. Downey, Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.



R Removal/Installation of the CJ9L Wiring Harness
R Figure 401/TASK 73-21-50-991-022- 69 (SHEET 6)



R Removal/Installation of the CJ9L Wiring Harness
R Figure 401/TASK 73-21-50-991-022- 99 (SHEET 9)